EXHIBIT C

S80
77 GHz 4D Digital Imaging Radar-on-Chip

Overview

The S80 is a fully integrated 77 GHz, 4D Imaging Radar-on-Chip (RoC) with Digital Code Modulation (DCM) certified for use in key automotive safety applications, such as automatic emergency braking, lane keep assist, adaptive cruise control, and blind-spot detection, as well as automated driving functions, including autonomous vehicles.

The RoC uses a PMCW (phase modulated continuous wave), MIMO (multiple-input multiple-output) radar architecture capable of processing up to 192 virtual channels. It supports 12 transmit antenna channels (Tx) and 16 receive antenna channels (Rx). The S80 is fully software-defined, has built-in processors to run algorithms on-chip and can also enable optimization with deep learning neural networks and AI (artificial intelligence) found in the most advanced automated perception systems. The device's DCM minimizes mutual interference from neighboring radars and provides high contrast resolution (HCR) delivering maximum discrimination, as well as high-confidence detection of independent targets, including vulnerable road users (VRUs), such as pedestrians and cyclists, in long- (LRR), mid- (MRR), and short-range radar (SRR) applications.

Key Features

- 76-81 GHz Frequency Range
- 4D Radar: Simultaneous Measurement of Range, Velocity, Azimuth, and Elevation
- 192 Virtual Receive Channels (VRx)
    - 96 VRx with True MIMO
- 16 Receive Antenna Channels (Rx)
- 12 Transmit Antenna Channels (Tx)
- Range Resolution: 7.5 cm
- Doppler Resolution: Up to 0.01 m/s
- Advanced Interference Mitigation
- Cascade Up to 4 RoCs (3072 VRx) with Full MIMO Scaling
- AEC-Q104 Qualified
- Functional Safety (ISO 26262): Certified to ASIL-B
- Fully Software Defined: Supports User and Third-Party Algorithms On-Chip, Over-the-Air Synchronization

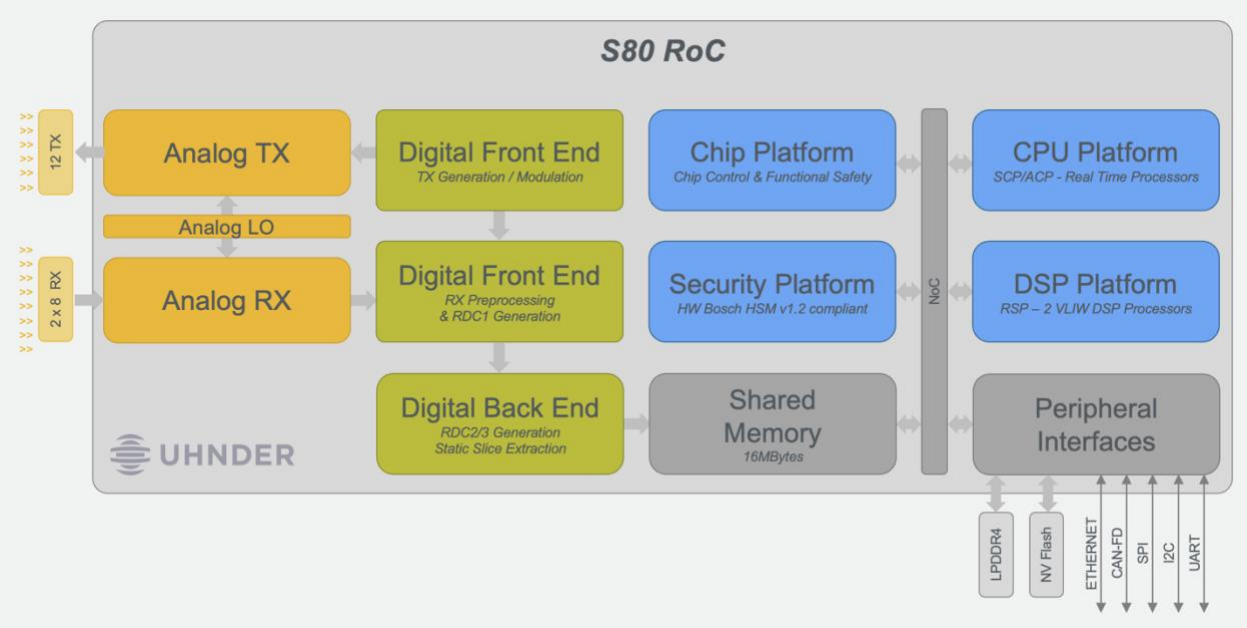
Target Applications

- Automotive Imaging Radar
- Automated Driving Systems (ADS)
- Autonomous Vehicles (AVs)
- Pedestrian Automatic Emergency Braking (P-AEB)
- Lane Keep Assist (LKA)
- Blind Spot and Cross-Traffic Detection (BSD and CTD)

Key Specifications

S80 Radar-on-Chip (RoC)	Value
Center Frequency	76 – 81 GHz
Channels	12 Tx & 16 [2x8] Rx
Output Power - Combined	+22 dBm
Maximum Modulation Bandwidth	2 GHz
Noise Figure (NF)	10 dB
Phase Noise (PN)	-95 dBc / Hz @ 1 MHz [81 GHz]
Receive Channel (Rx) Isolation	> 25 dB [Virtual Rx: > 40 dB]
Transmit (Tx) to Receive (Rx) Channel Isolation	> 50 dB
Internal Memory	16 MB
External Memory	Up to 2 GB LPDDR4 [Up to 32-bit @ 4266 MHz]
ADC	8-bit, 2 GSPS [I/Q - 2 per Rx]
Processors	2 Cortex-R5F ARM CPUs & 2 Tensilica-P5 DSPs
Security (Secure Boot, Interference, Updates)	Hardware Security Module - ARM Cortex M0+
I/O Interfaces	100/1000 Ethernet, CAN-FD, I2C, QSPI, GPIO
Power Consumption	9.5 W @ 50% Duty Cycle
Package	12.8 mm x 8.21 mm eWLB
Temperature Range (Tj)	-40°C to +125°C

Typical Application Block Diagram



Revision History

Rev	Description	Date	Author
0.1	Initial version	3/2022	Uhnder, Inc
1.0	Changes to Key Features, Key Specifications, and Typical Application Block Diagram	5/2022	Uhnder, Inc